WHAT IS CLAIMED IS:

1.   A   method   for   performing   operations   using quantum correlithm objects, comprising:

establishing a plurality of real states, each real state comprising an element of a real space;

encoding the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

projecting the correlithm object to the real space using a measurement basis;

determining   a   plurality   of   measurement   values corresponding to the measurement basis; and

retrieving the projected correlithm object according to the measurement values.

2.   The method of Claim 1, wherein a quantum object of the plurality of quantum objects comprises an object selected from a group consisting of a quantum bit, a quantum register, and an ebit.

3.   The method of Claim 1, wherein encoding the real states as the quantum objects comprises assigning a plurality of values to the real states.

4.   The method of Claim 1, wherein encoding the real states as the quantum objects comprises adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state.

5.   The method of Claim 1, wherein:

each quantum object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

6.   The method of Claim 1, further comprising performing an intermediate operation prior to determining the plurality of measurement values corresponding to the measurement basis.

7.   The method of Claim 1, wherein retrieving the projected correlithm object according to the measurement values comprises:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

8.   A   system   for   performing   operations   using quantum correlithm objects, comprising:

a source operable to establish a plurality of real states, each real state comprising an element of a real space;

a first filter operable to encode the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

a second filter operable to project the correlithm object to the real space using a measurement basis, the second filter matched with the first filter; and

an analyzer operable to:

determine a plurality of measurement values corresponding to the measurement basis; and

retrieve the projected correlithm object according to the measurement values.

9.   The system of Claim 8, wherein a quantum object of the plurality of quantum objects comprises an object selected from a group consisting of a quantum bit, a quantum register, and an ebit.

10. The system of Claim 8, wherein the first filter is operable to encode the real states as the quantum objects by assigning a plurality of values to the real states.

11. The system of Claim 8, wherein the first filter is operable to encode the real states as the quantum objects by adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state.

12.   The system of Claim 8, wherein:

each   quantum   object   is   associated   with   a probability; and

the measurement values are determined in accordance with the probabilities.

13.   The system of Claim 8, wherein an intermediate operation is performed prior to determining the plurality of measurement values corresponding to the measurement basis.

14.   The system of Claim 8, wherein the analyzer is operable to retrieve the projected correlithm object according to the measurement values by:

establishing   a   plurality   of   predicted   values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving   the   projected   correlithm   object   in accordance with the comparison.

15. A computing system for performing operations using quantum correlithm objects, comprising:

a database operable to store data; and

a server system coupled to the database operable to:

establish a plurality of real states, each real state comprising an element of a real space;

encode the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

project the correlithm object to the real space using a measurement basis;

determine a plurality of measurement values corresponding to the measurement basis; and

retrieve the projected correlithm object according to the measurement values.

16. The computing system of Claim 15, wherein a quantum object of the plurality of quantum objects comprises an object selected from a group consisting of a quantum bit, a quantum register, and an ebit.

17. The computing system of Claim 15, wherein the server system is operable to encode the real states as the quantum objects by assigning a plurality of values to the real states.

18. The computing system of Claim 15, wherein the server system is operable to encode the real states as the quantum objects by adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state.

19.   The computing system of Claim 15, wherein:

each   quantum   object   is   associated   with   a probability; and

5   the measurement values are determined in accordance with the probabilities.

20.   The computing system of Claim 15, wherein the server system is operable to perform an intermediate
10   operation   prior   to   determining   the   plurality   of measurement   values   corresponding   to   the   measurement basis.

21.   The computing system of Claim 15, wherein the
15   server   system   is   operable   to   retrieve   the   projected correlithm object according to the measurement values by:

establishing   a   plurality   of   predicted   values corresponding to the measurement basis;

comparing the measurement values with the predicted
20   values using a metric; and

retrieving   the   projected   correlithm   object   in accordance with the comparison.

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22. Logic for performing operations using quantum correlithm objects, the logic embodied in a medium and operable to:

establish a plurality of real states, each real state comprising an element of a real space;

encode the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

project the correlithm object to the real space using a measurement basis;

determine a plurality of measurement values corresponding to the measurement basis; and

retrieve the projected correlithm object according to the measurement values.

23. The logic of Claim 22, wherein a quantum object of the plurality of quantum objects comprises an object selected from a group consisting of a quantum bit, a quantum register, and an ebit.

24. The logic of Claim 22, operable to encode the real states as the quantum objects by assigning a plurality of values to the real states.

25. The logic of Claim 22, operable to encode the real states as the quantum objects by adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state.

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26. The logic of Claim 22, wherein:

each quantum object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

27. The logic of Claim 22, operable to perform an intermediate operation prior to determining the plurality of measurement values corresponding to the measurement basis.

28. The logic of Claim 22, operable to retrieve the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

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29. A system for performing operations using quantum correlithm objects, comprising:

means for establishing a plurality of real states, each real state comprising an element of a real space;

5   means for encoding the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

means for projecting the correlithm object to the real space using a measurement basis;

10   means for determining a plurality of measurement values corresponding to the measurement basis; and

means for retrieving the projected correlithm object according to the measurement values.

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30. A method for performing operations using quantum correlithm objects, comprising:

establishing a plurality of real states, each real state comprising an element of a real space;

encoding the real states as a plurality of quantum objects by assigning a plurality of random values to the real states, and by adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state, the quantum objects representing a correlithm object, a quantum object of the plurality of quantum objects comprising an object selected from a group consisting of a quantum bit, a quantum register, and an ebit;

projecting the correlithm object to the real space using a measurement basis;

performing an intermediate operation prior to determining the plurality of measurement values corresponding to the measurement basis;

determining a plurality of measurement values corresponding to the measurement basis, each quantum object associated with a probability, and the measurement values determined in accordance with the probabilities; and

retrieving the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

31.   A   method   for   performing   operations   using
physical correlithm objects, comprising:

establishing a plurality of real states, each real
state comprising an element of a real space;

encoding the real states as a plurality of physical
objects, the physical objects representing a correlithm
object;

projecting the correlithm object to the real space
using a measurement basis;

determining   a   plurality   of   measurement   values
corresponding to the measurement basis; and

retrieving the projected correlithm object according
to the measurement values.

32.   The method of Claim 31, wherein encoding the
real states as the physical objects comprises assigning a
plurality of values to the real states.

33.   The method of Claim 31, wherein:

each   physical   object   is   associated   with   a
probability; and

the measurement values are determined in accordance
with the probabilities.

34.   The method of Claim 31, wherein retrieving the
projected correlithm object according to the measurement
values comprises:

establishing   a   plurality   of   predicted   values
corresponding to the measurement basis;

comparing the measurement values with the predicted
values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

35. A system for performing operations using physical correlithm objects, comprising:

a database operable to store data; and

a server system coupled to the database operable to:

establish a plurality of real states, each real state comprising an element of a real space;

encode the real states as a plurality of physical objects, the physical objects representing a correlithm object;

project the correlithm object to the real space using a measurement basis;

determine a plurality of measurement values corresponding to the measurement basis; and

retrieve the projected correlithm object according to the measurement values.

36. The system of Claim 35, the server system operable to encode the real states as the physical objects by assigning a plurality of values to the real states.

37. The system of Claim 35, wherein:

each physical object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

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38. The system of Claim 35, the server system operable to retrieve the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

39. A logic for performing operations using physical correlithm objects, the logic embodied in a medium and operable to:

establish a plurality of real states, each real state comprising an element of a real space;

encode the real states as a plurality of physical objects, the physical objects representing a correlithm object;

project the correlithm object to the real space using a measurement basis;

determine a plurality of measurement values corresponding to the measurement basis; and

retrieve the projected correlithm object according to the measurement values.

40. The logic of Claim 39, operable to encode the real states as the physical objects by assigning a plurality of values to the real states.

41. The logic of Claim 39, wherein:

each physical object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

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42. The logic of Claim 39, operable to retrieve the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

43. A system for performing operations using physical correlithm objects, comprising:

means for establishing a plurality of real states, each real state comprising an element of a real space;

5   means for encoding the real states as a plurality of physical objects, the physical objects representing a correlithm object;

means for projecting the correlithm object to the real space using a measurement basis;

10   means for determining a plurality of measurement values corresponding to the measurement basis; and

means for retrieving the projected correlithm object according to the measurement values.

44. A method for performing operations using physical correlithm objects, comprising:

establishing a plurality of real states, each real state comprising an element of a real space;

5   encoding the real states as a plurality of physical objects, the physical objects representing a correlithm object by assigning a plurality of values to the real states, each physical object associated with a probability;

10   projecting the correlithm object to the real space using a measurement basis;

determining a plurality of measurement values corresponding to the measurement basis, the measurement values determined in accordance with the probabilities;

15   and

retrieving the projected correlithm object according to the measurement by:

establishing a plurality of predicted values corresponding to the measurement basis;

20   comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

45. A method for calculating a tensor product, comprising:

generating a first set of one or more first correlithm objects at a correlithm object generator, each first correlithm object representing a first orthonormal basis vector;

generating a second set of one or more correlithm objects at the correlithm object generator, each second correlithm object representing a second orthonormal basis vector; and

performing a tensor operation on the first set and the second set to generate a tensor product of the first set and the second set, the tensor product comprising a plurality of third orthonormal basis vectors.

46. The method of Claim 45, wherein the tensor product comprises a cardinal tensor product.

47. The method of Claim 45, wherein:

the one or more first correlithm objects are organized as one or more first string correlithm objects;

the one or more second correlithm objects are organized as one or more second string correlithm objects; and

the tensor product comprises an ordinal tensor product.

48. A system for calculating a tensor product, comprising:

a database operable to store data; and

a server system coupled to the database and operable to:

generate a first set of one or more first correlithm objects at a correlithm object generator, each first correlithm object representing a first orthonormal basis vector;

generate a second set of one or more correlithm objects at the correlithm object generator, each second correlithm object representing a second orthonormal basis vector; and

perform a tensor operation on the first set and the second set to generate a tensor product of the first set and the second set, the tensor product comprising a plurality of third orthonormal basis vectors.

49. The system of Claim 48, wherein the tensor product comprises a cardinal tensor product.

50. The system of Claim 48, wherein:

the one or more first correlithm objects are organized as one or more first string correlithm objects;

the one or more second correlithm objects are organized as one or more second string correlithm objects; and

the tensor product comprises an ordinal tensor product.

51. Logic for calculating a tensor product, the logic embodied in a medium and operable to:

generating a first set of one or more first correlithm objects at a correlithm object generator, each first correlithm object representing a first orthonormal basis vector;

generating a second set of one or more correlithm objects at the correlithm object generator, each second correlithm object representing a second orthonormal basis vector; and

performing a tensor operation on the first set and the second set to generate a tensor product of the first set and the second set, the tensor product comprising a plurality of third orthonormal basis vectors.

52. The logic of Claim 51, wherein the tensor product comprises a cardinal tensor product.

53. The logic of Claim 51, wherein:

the one or more first correlithm objects are organized as one or more first string correlithm objects;

the one or more second correlithm objects are organized as one or more second string correlithm objects; and

the tensor product comprises an ordinal tensor product.